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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Hydrogeologic Review of Draft RI Report for Boarhead Farms Site

DATE: December 4, 1995

FROM: Bruce Rundell, Geologist
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TO: Harry Harbold, RPM
Central Pa. Section (3HW27)

This document was reviewed to insure that the data was accurately presented and interpretations thorough and complete. Data collection and analysis was found to be well done. Comments on the document mainly concern the figures and data presentation.

OK 1. Figure size should not be restricted to 8.5 x 11 in. Many figures need to be enlarged in order to make the data legible.

2. Figures 3-7 thru 3-12. These cross-sections need to be enlarged so that the complete section fits on one sheet of paper. If possible the same scale should be used on all figures. Water level data needs to be posted near the wells point of entry. The mid-point of overburden screens should be used to post overburden data. Best judgment should be used to post water level elevations for bedrock wells, i.e. depending on knowledge of fracture locations. The water level data should be contoured to create a vertical potentiometric profile for all cross-sections. The deep and shallow cross-sections need to be combined for this effort.

3. The potentiometric surface maps for the deep diabase (Figure 3-20 and 22) need to be contoured and the findings included in the text. This can be done by excluding MW-24 from the interpretation. This well is screened at a shallower interval than the other deep wells, and the water level within this well is more representative of the shallower flow system. Contouring of figure 3-20 should reveal a generally northward flow direction. The 7/27/95 water elevation for MW-25 needs to checked. It is approximately 60 feet higher than the three previous measurements. The flow gradient and velocity should be also ne calculated included in the text.

4. The flow lines on Figure 3-23 need to show recharge and discharge areas.

5. It would be helpful to the reader if the figures in Section 4, showing

ground water contaminant levels, highlight all levels above MCLs. It may also be helpful to highlight subsurface soil concentrations above the MULIMED clean up level.

6. The narrative for ground water fate and transport needs to more fully discuss vertical gradients in the area of the wooded wetland, possible discharge of contaminated water to the wooded wetland and the possibility of natural remediation occurring in the wetlands. Variations in geochemical parameters such as dissolved oxygen, nitrogen, phosphate, sulfides, ph or other parameters that may indicate that natural biological remediation is occurring. Conversely can it be argued that based on ground water velocities contamination is just beginning to reach Lonely Cottage Road. Given that disposal occurred roughly 20 years ago ground water contamination should have reached the road.

If you have any questions feel free to contact me at (215) 597-1268.